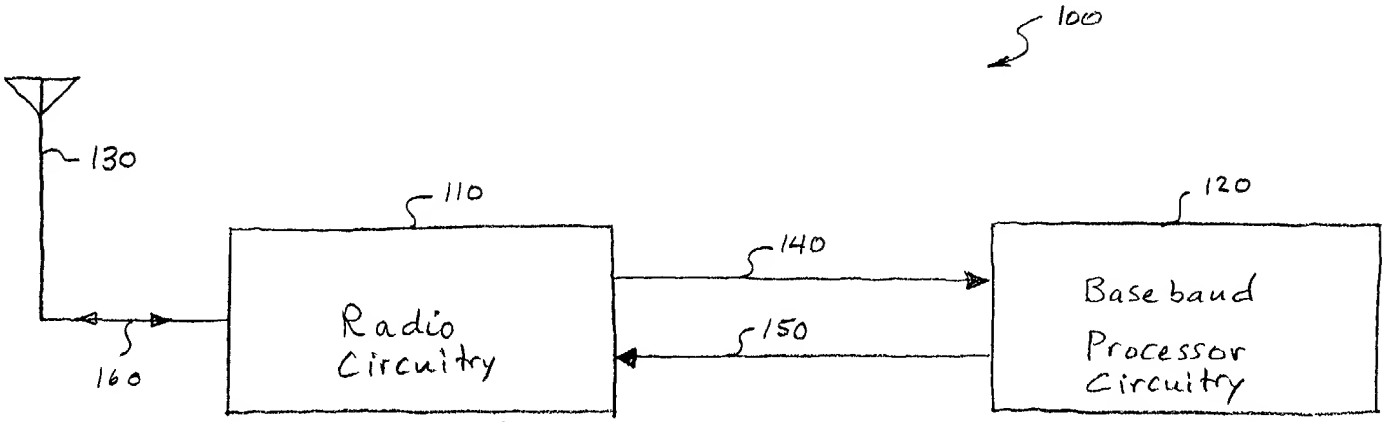

100
130
110
120
140
150
160
Radio Circuitry
Baseband Processor Circuitry

FIG. 1

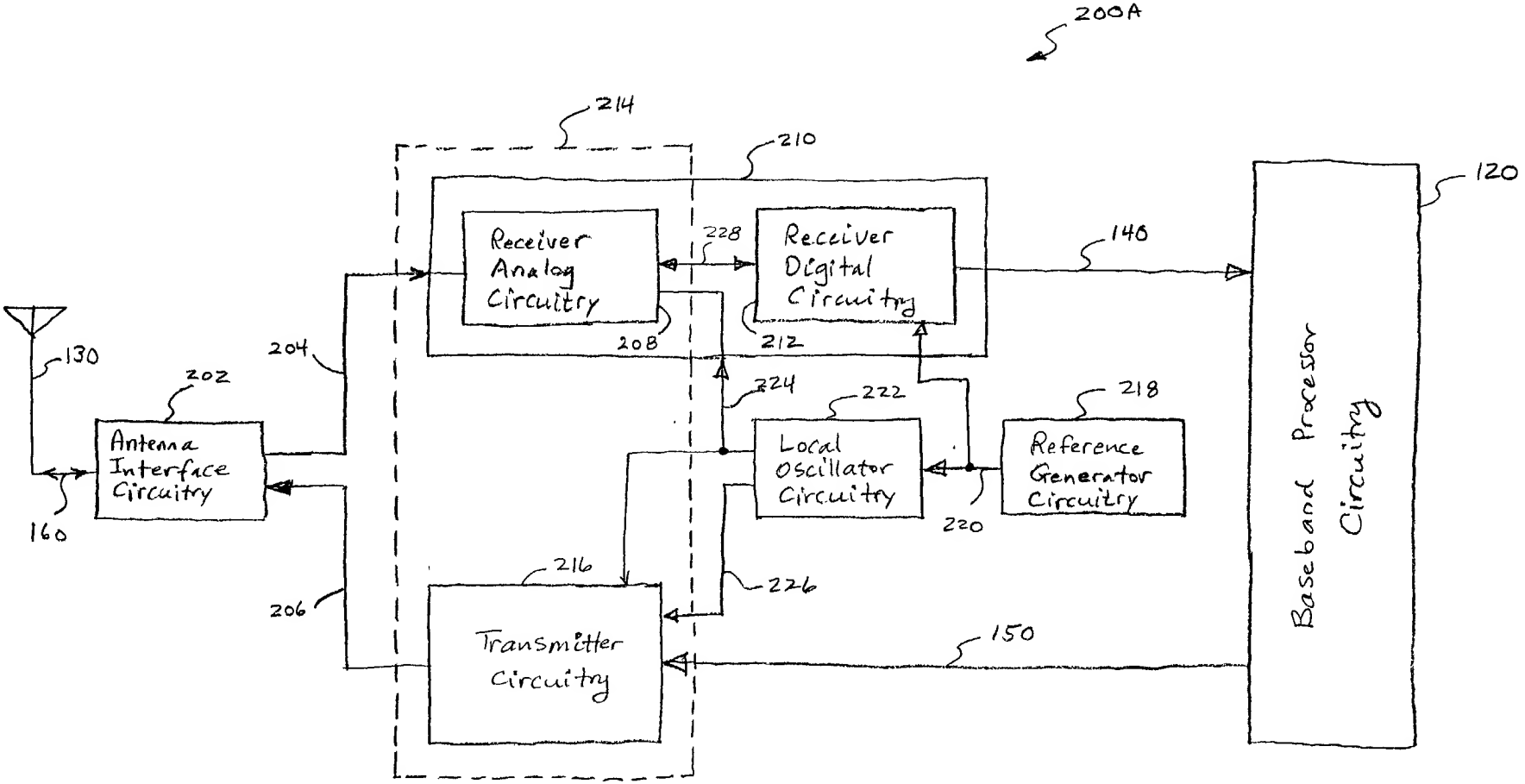

200A
214
210
120
Receiver Analog Circuitry
228
Receiver Digital Circuitry
140
130
204
208
212
202
224
222
218
Antenna Interface Circuitry
Local Oscillator Circuitry
Reference Generator Circuitry
160
220
216
206
226
Transmitter Circuitry
150
Baseband Processor Circuitry

FIG. 2A

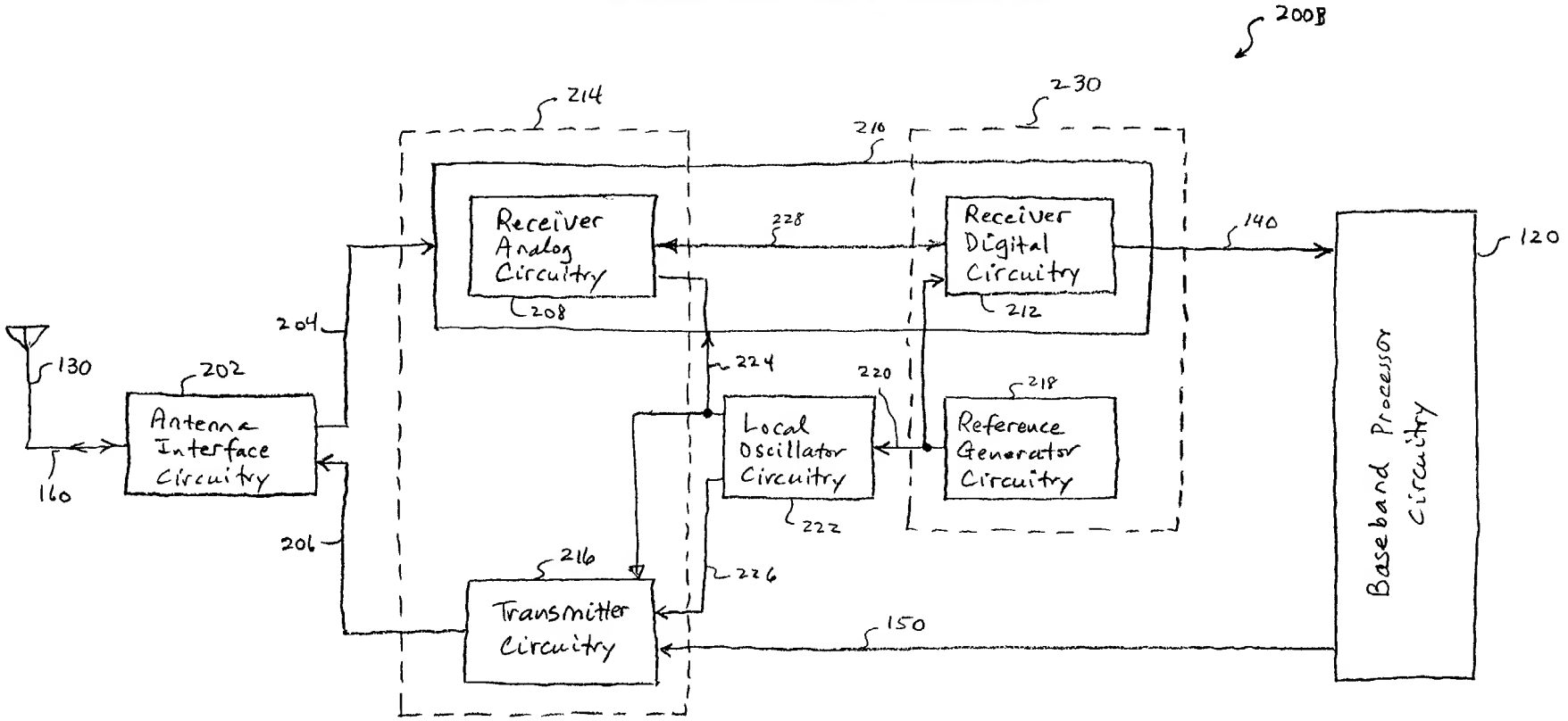

200B
214
230
210
Receiver Analog Circuitry
208
228
Receiver Digital Circuitry
212
140
120
Baseband Processor Circuitry
204
130
202
Antenna Interface Circuitry
160
224
220
218
Local Oscillator Circuitry
222
Reference Generator Circuitry
206
216
226
Transmitter Circuitry
150

FIG. 2B

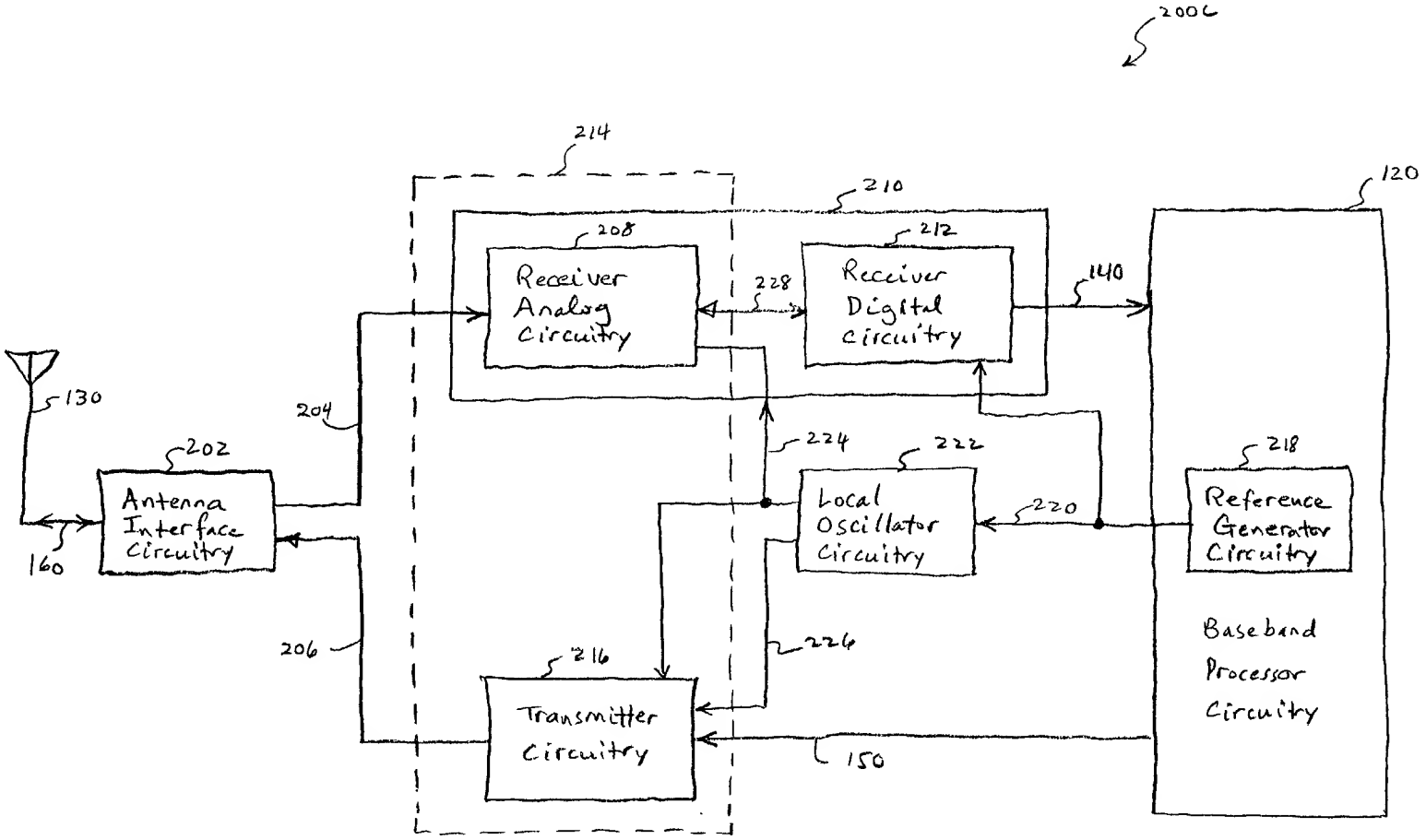


FIG. 2C

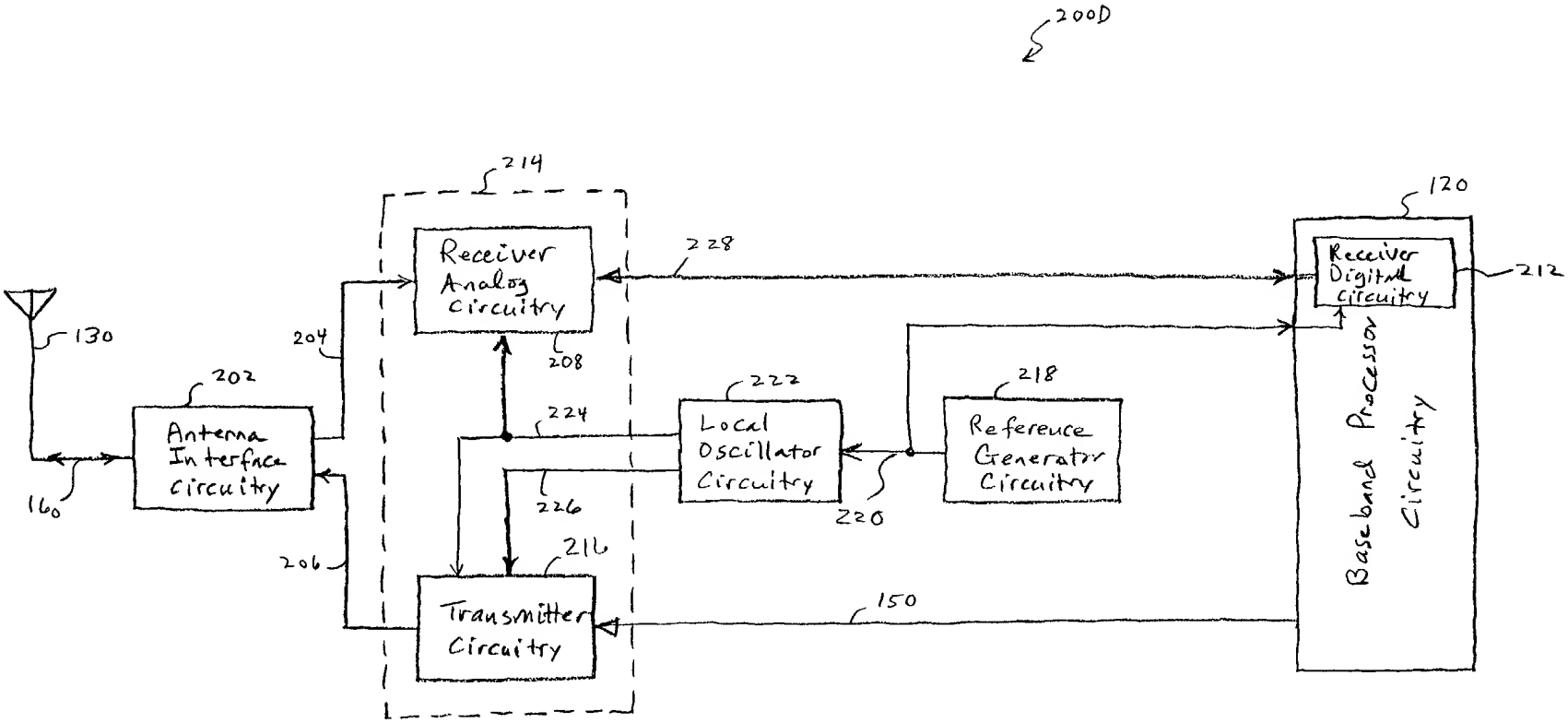

200D
214
120
Receiver Analog circuitry
228
Receiver Digital circuitry
212
130
204
208
202
224
222
218
Antenna Interface circuitry
Local Oscillator Circuitry
Reference Generator Circuitry
Baseband Processor Circuitry
160
226
220
206
216
Transmitter Circuitry
150

FIG. 2D

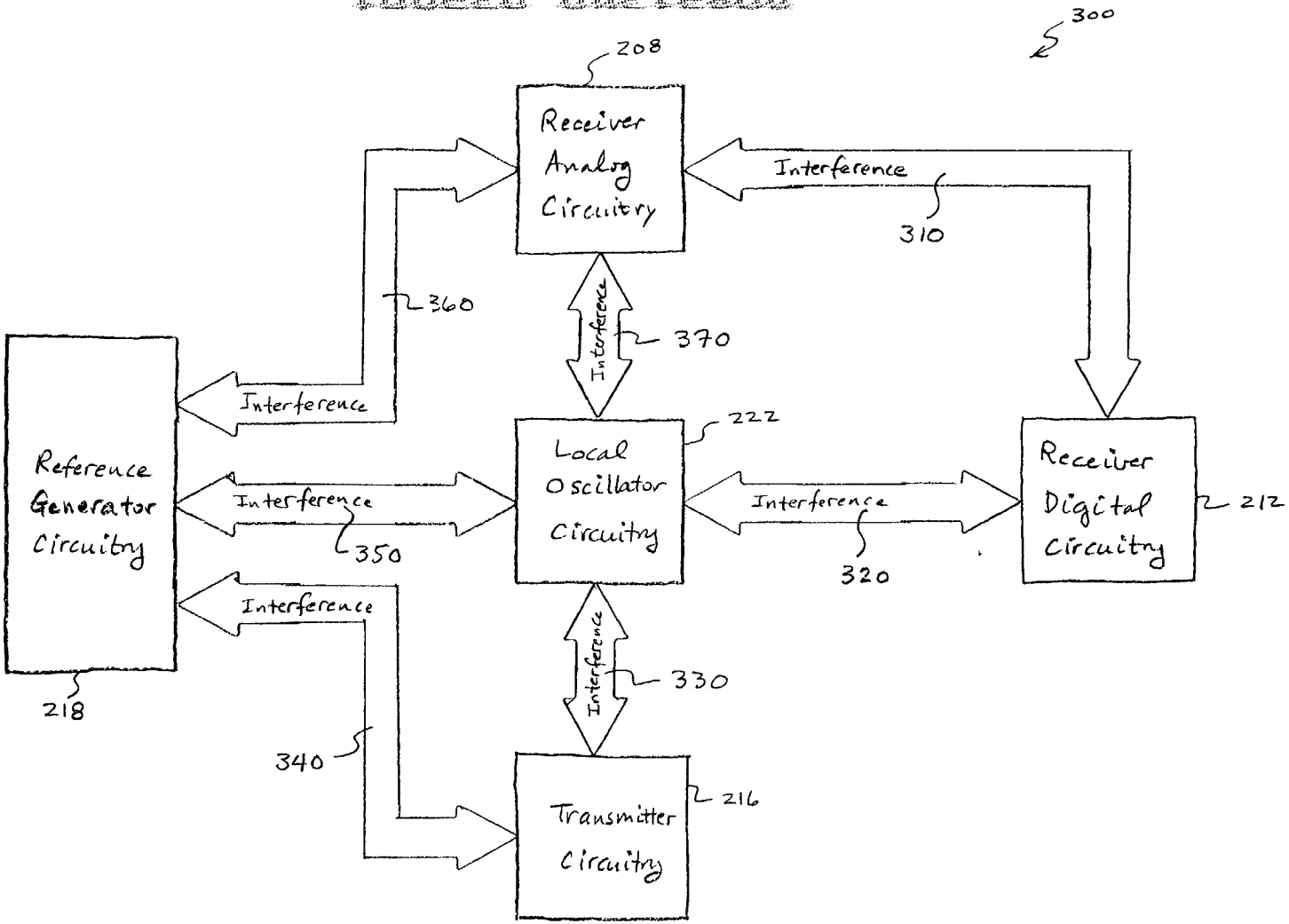


FIG. 3

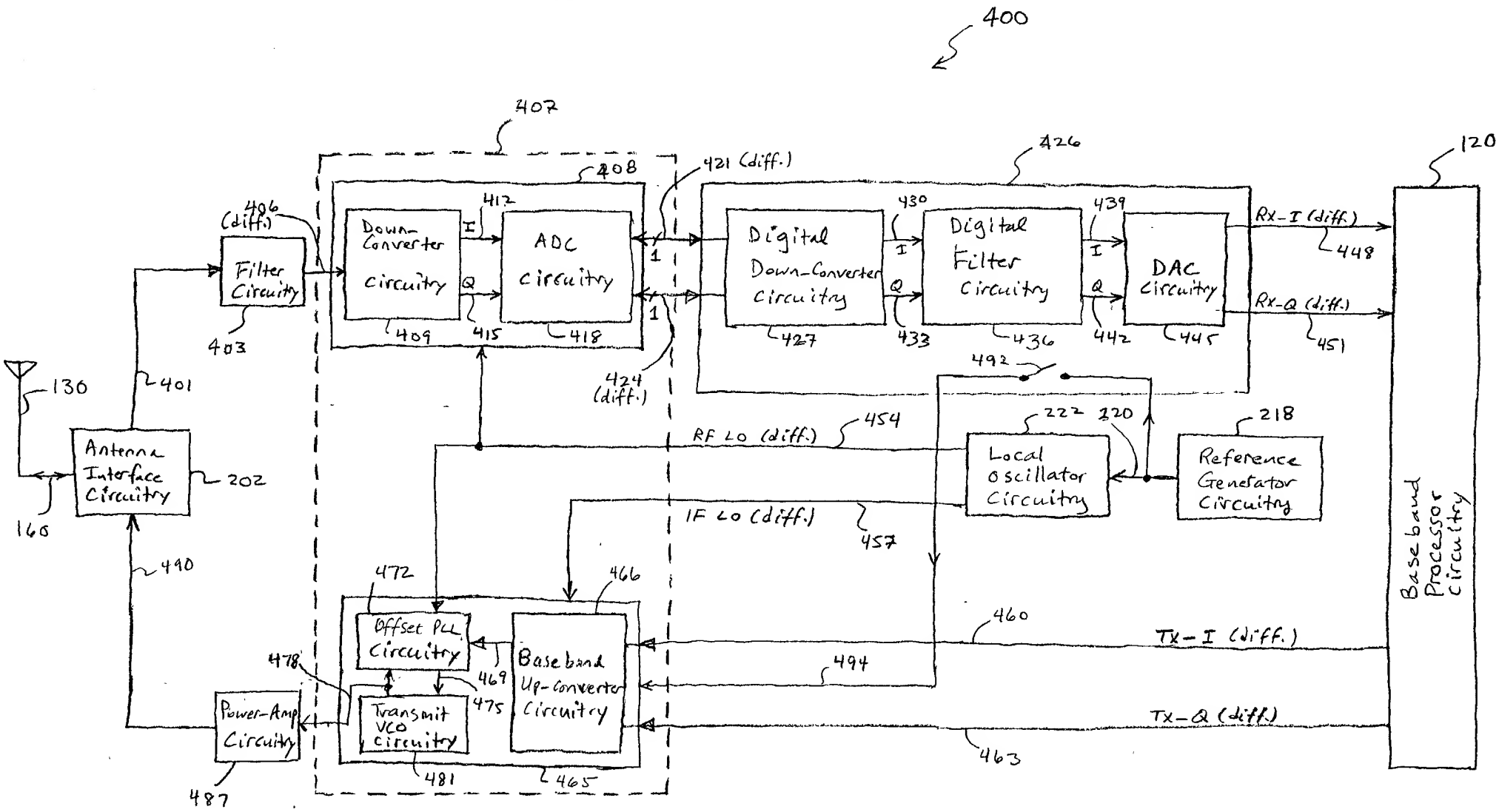

400
407
408
421 (diff.)
426
120
406 (diff.)
Filter Circuitry
403
Down-Converter circuitry
I
Q
412
409
415
ADC circuitry
418
1
1
424 (diff.)
Digital Down-Converter Circuitry
427
430
I
Q
433
Digital Filter Circuitry
436
439
I
Q
442
DAC Circuitry
445
RX-I (diff.)
448
RX-Q (diff.)
451
Baseband Processor Circuitry
492
130
401
Antenna Interface Circuitry
202
160
490
RF LO (diff.)
454
222
220
Local Oscillator Circuitry
218
Reference Generator Circuitry
IF LO (diff.)
457
472
466
Offset PLL Circuitry
469
Baseband Up-Converter Circuitry
460
TX-I (diff.)
494
478
475
Transmit VCO circuitry
Power-Amp Circuitry
TX-Q (diff.)
463
481
465
487

FIG. 4

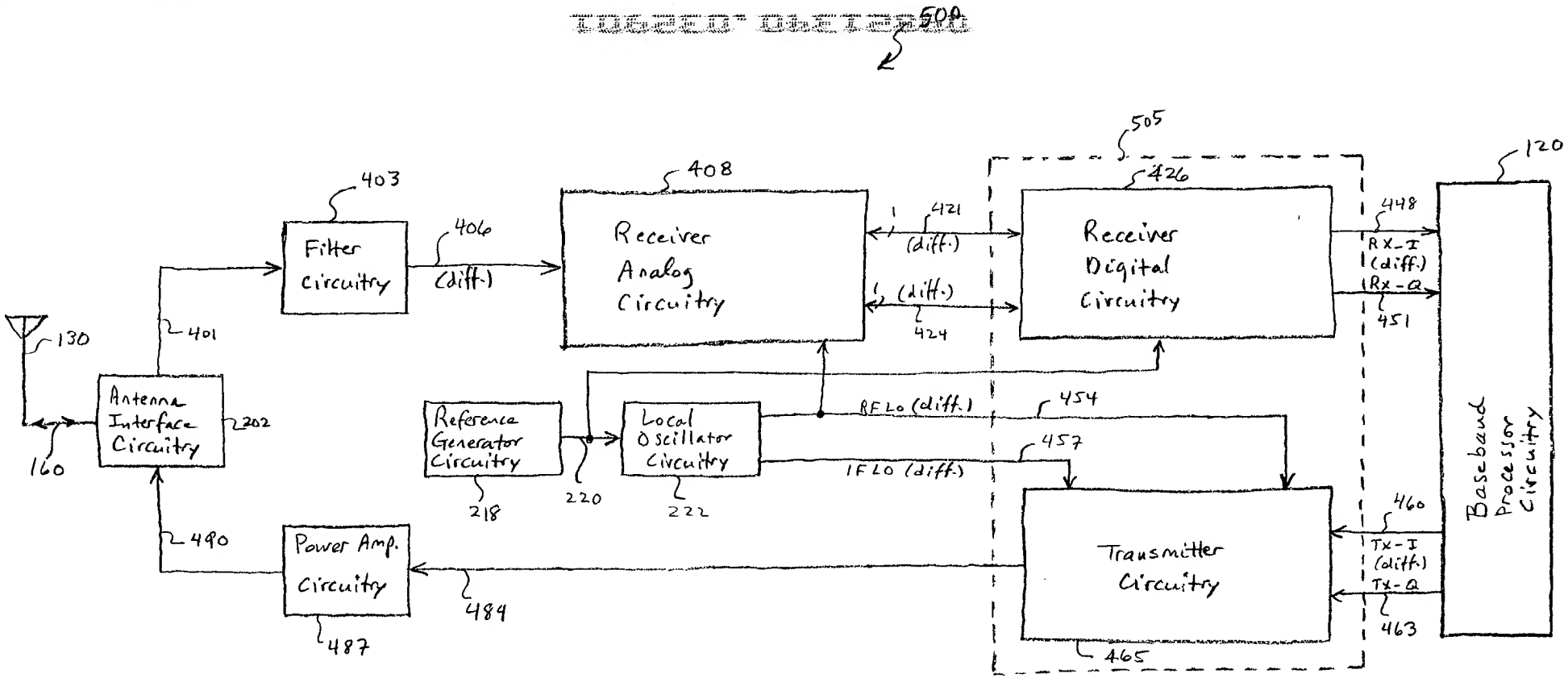

500
505
120
403
408
426
406
421
448
Filter Circuitry
(diff.)
Receiver Analog Circuitry
(diff.)
Receiver Digital Circuitry
RX-I (diff.)
Rx-Q
451
424
130
401
Antenna Interface Circuitry
202
160
Reference Generator Circuitry
218
220
Local Oscillator Circuitry
222
RFLO (diff.)
454
457
IFLO (diff.)
Baseband Processor Circuitry
460
Tx-I (diff.)
Tx-Q
463
Transmitter Circuitry
465
490
Power Amp. Circuitry
484
487

FIG. 5

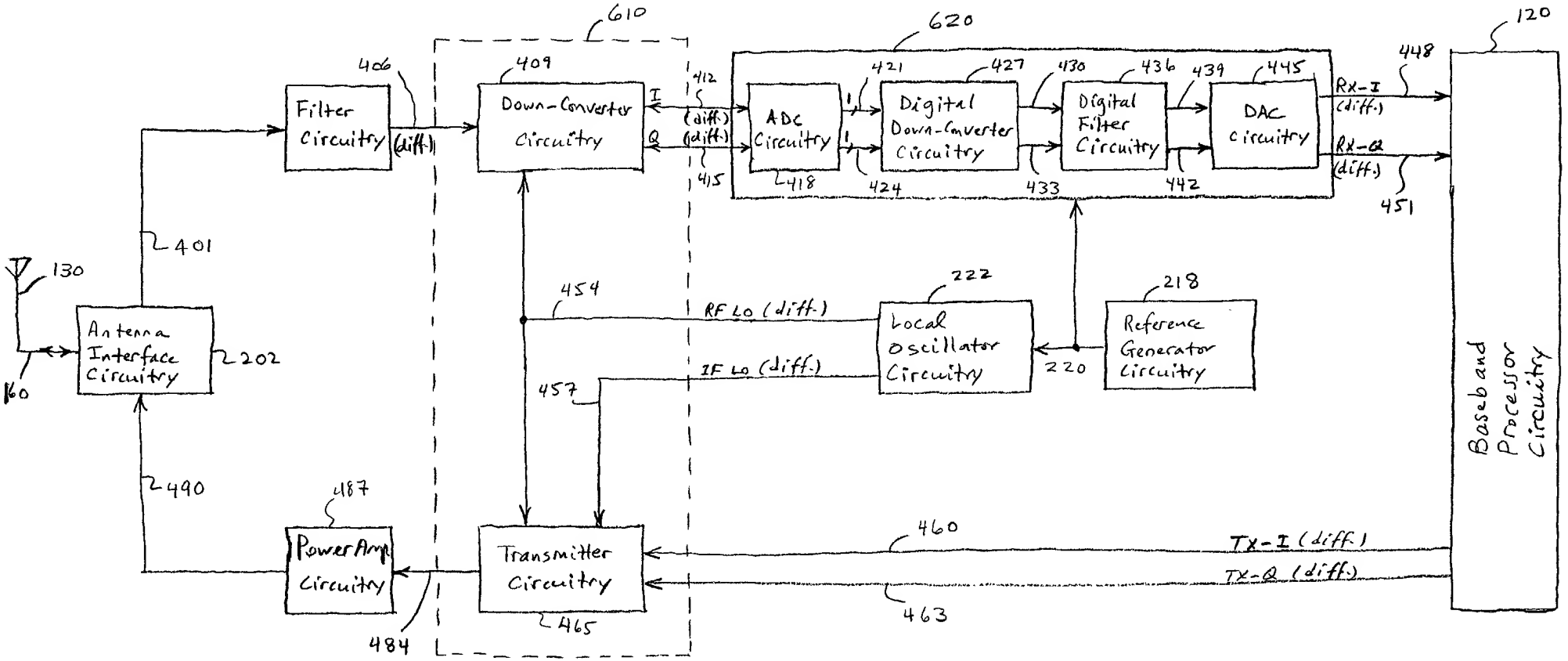

610
620
120
406
409
412
421
427
430
436
439
445
448
Filter Circuitry
(diff.)
Down-Converter Circuitry
I
Q
(diff.)
(diff.)
415
ADC Circuitry
I
I
418
424
Digital Down-Converter Circuitry
433
Digital Filter Circuitry
442
DAC circuitry
RX-I (diff.)
RX-Q (diff.)
451
Baseband Processor Circuitry
130
401
454
RF LO (diff.)
222
Local Oscillator Circuitry
218
Reference Generator Circuitry
220
IF LO (diff.)
457
Antenna Interface Circuitry
202
160
490
487
Power Amp Circuitry
Transmitter Circuitry
460
TX-I (diff.)
TX-Q (diff.)
463
465
484

FIG. 6

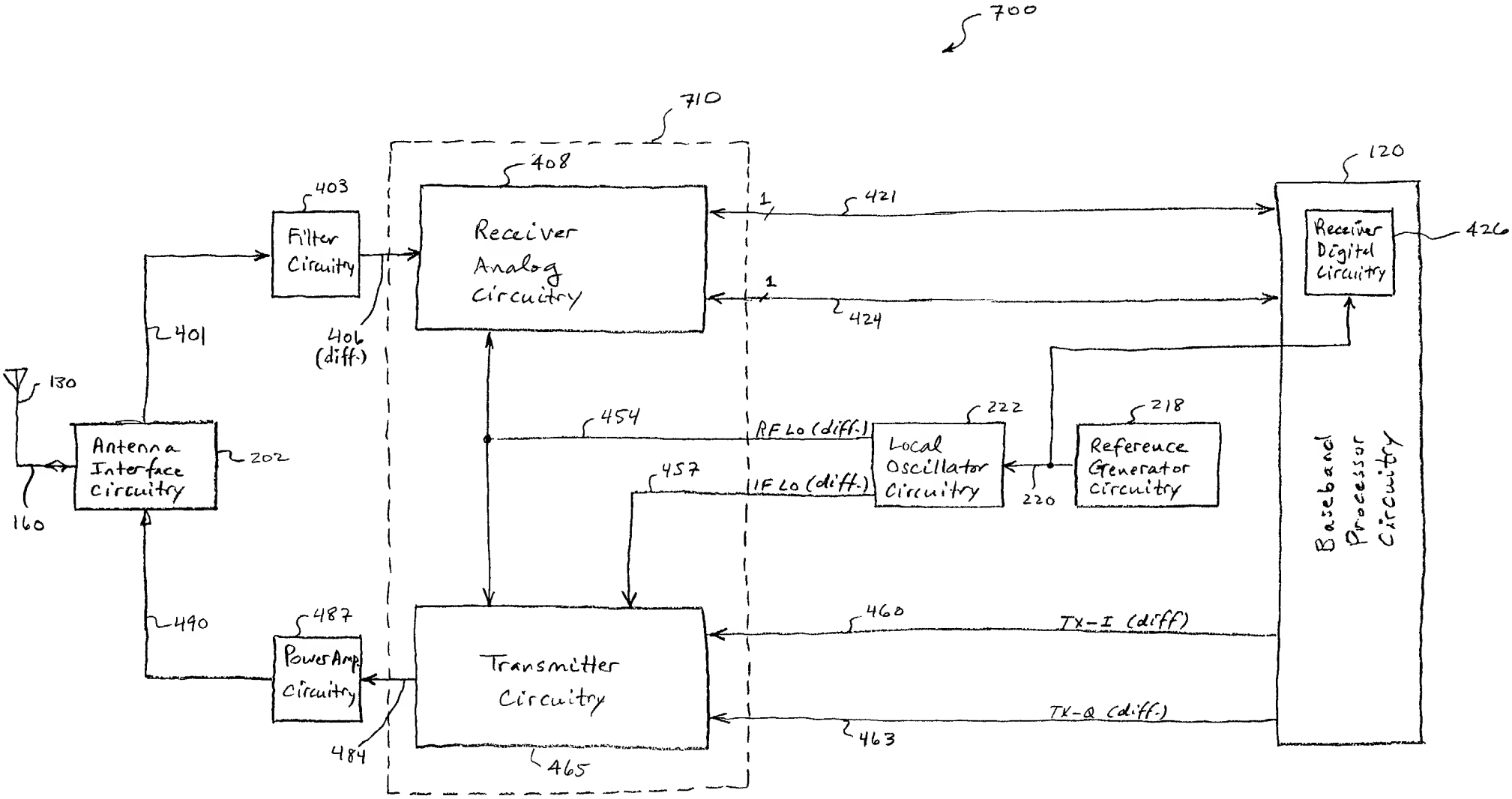

700
710
408
403
Filter Circuitry
Receiver Analog Circuitry
421
120
Receiver Digital Circuitry
426
424
406 (diff.)
401
130
Antenna Interface Circuitry
202
160
454
RF LO (diff.)
222
Local Oscillator Circuitry
218
Reference Generator circuitry
220
457
IF LO (diff.)
Baseband Processor Circuitry
490
487
Power Amp Circuitry
Transmitter Circuitry
460
TX-I (diff)
TX-Q (diff.)
463
484
465

FIG. 7

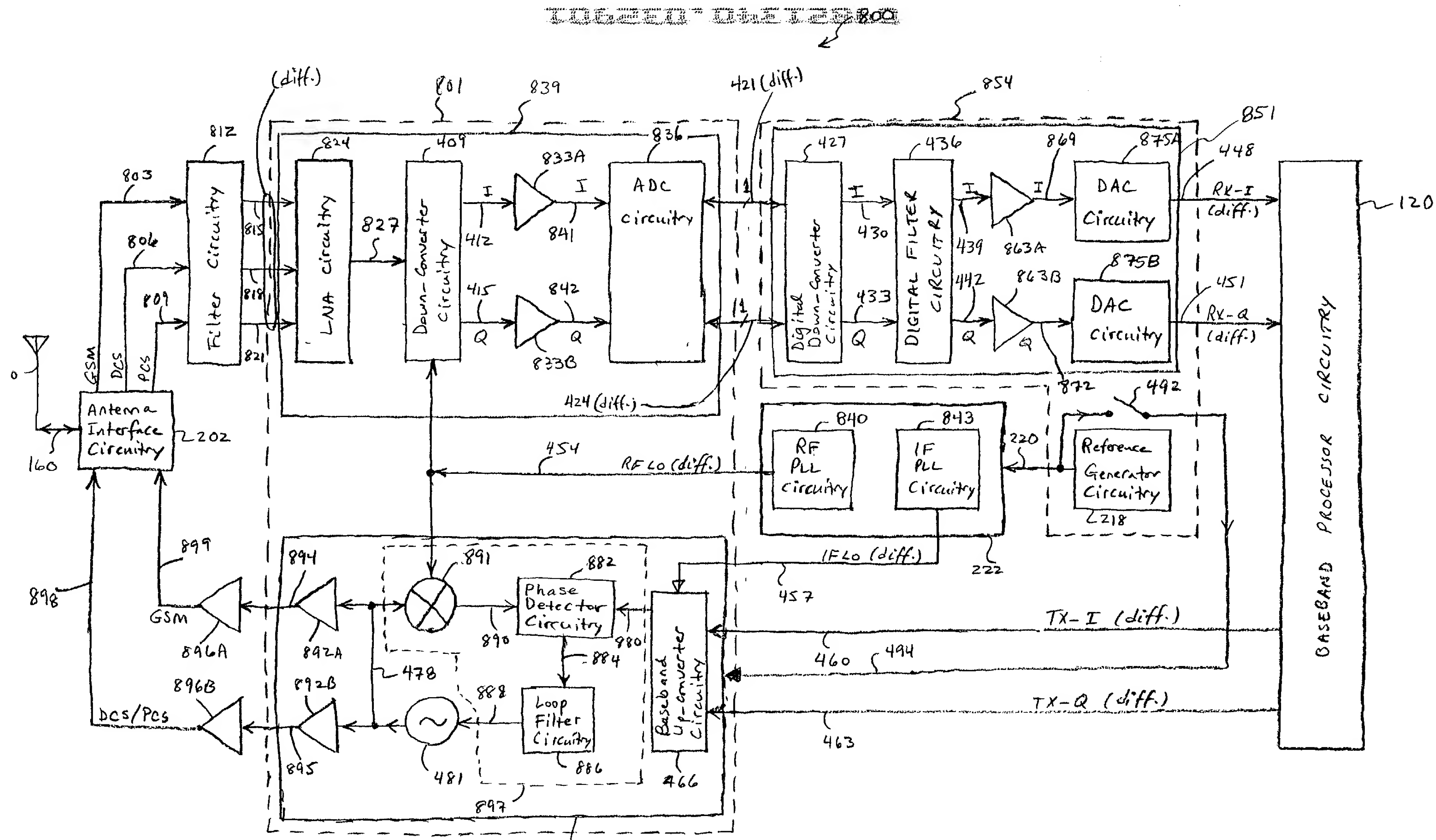

800
Antenna Interface Circuitry
Filter Circuitry
LNA circuitry
Down-Converter circuitry
ADC circuitry
Digital Down-Converter Circuitry
DIGITAL FILTER CIRCUITRY
DAC Circuitry
DAC circuitry
RX-I (diff.)
RX-Q (diff.)
BASEBAND PROCESSOR CIRCUITRY
RF PLL circuitry
IF PLL Circuitry
Reference Generator Circuitry
RF LO (diff.)
IF LO (diff.)
Phase Detector Circuitry
Loop Filter Circuitry
Baseband Up-Converter Circuitry
TX-I (diff.)
TX-Q (diff.)
GSM
DCS
PCS
DCS/PCS
(diff.)
421 (diff.)
424 (diff.)
I
Q
120
160
202
218
220
222
409
412
415
427
430
433
436
439
442
448
451
454
457
460
463
466
478
481
492
494
801
803
806
809
812
815
818
821
824
827
833A
833B
836
839
840
841
842
843
851
854
863A
863B
869
872
875A
875B
877
882
884
886
888
890
891
892A
892B
894
895
896A
896B
897
898
899
980

FIG. 8

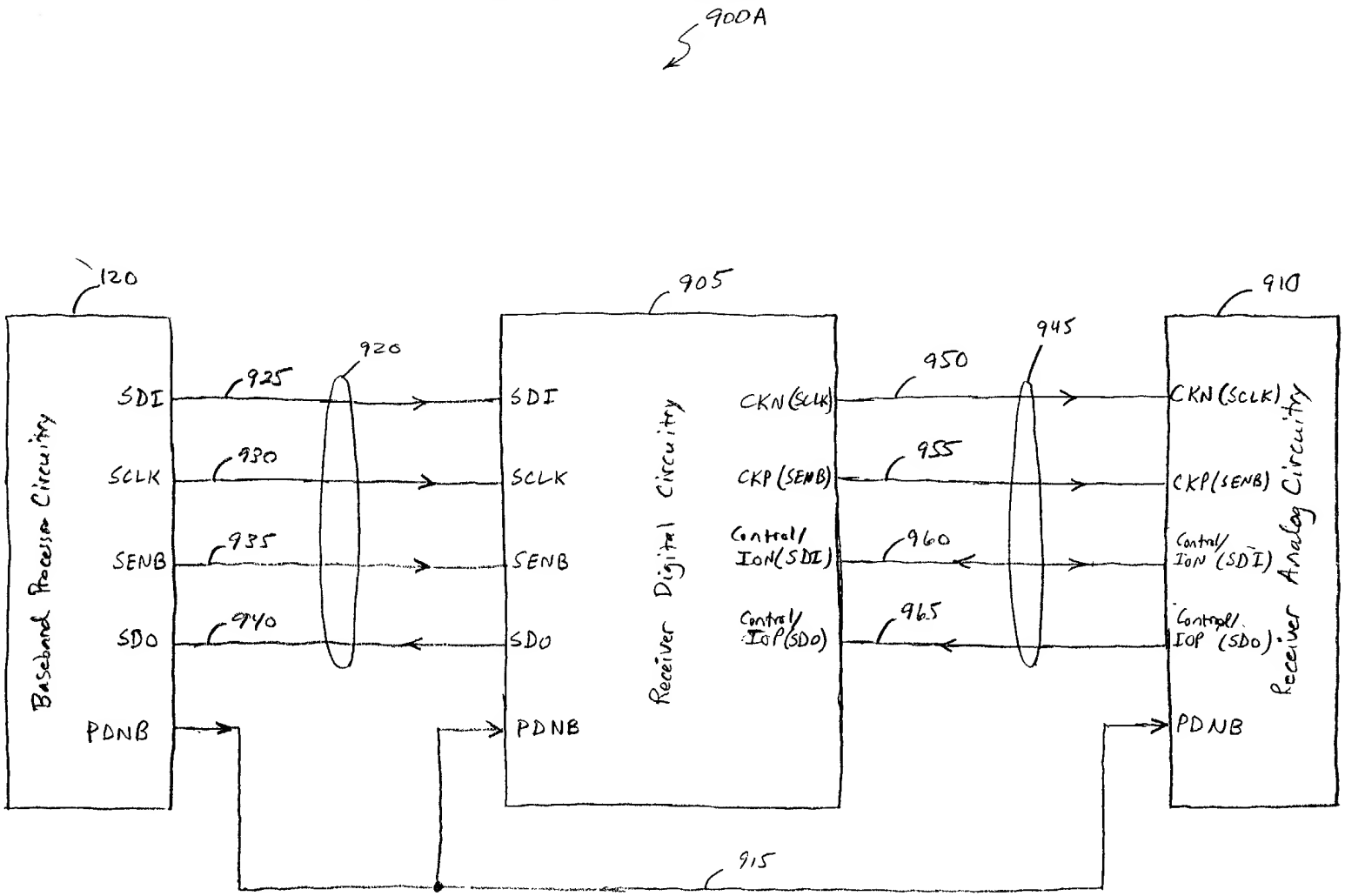
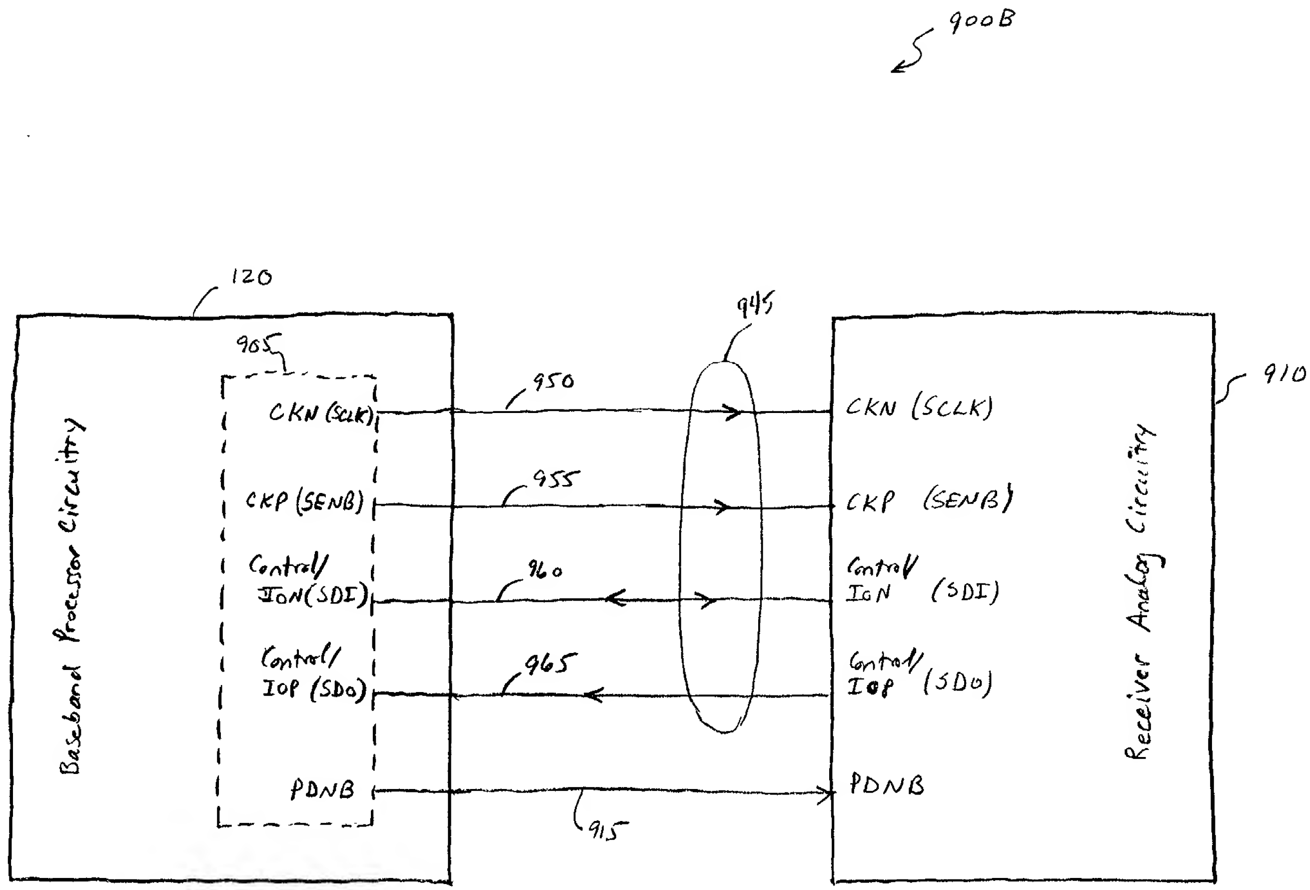

900A
120
905
910
Baseband Processor Circuitry
Receiver Digital Circuitry
Receiver Analog Circuitry
SDI
SCLK
SENB
SDO
PDNB
925
930
935
940
920
CKN(SCLK)
CKP(SENB)
Control IoN(SDI)
Control IoP(SDO)
950
955
960
965
945
915

FIG. 9A



900B
120
905
Baseband Processor Circuitry
CKN (SCLK)
CKP (SENB)
Control/ ION (SDI)
Control/ IOP (SDO)
PDNB
945
950
955
960
965
915
910
CKN (SCLK)
CKP (SENB)
Control/ IGN (SDI)
Control/ IOP (SDO)
PDNB
Receiver Analog Circuitry

FIG. 9B

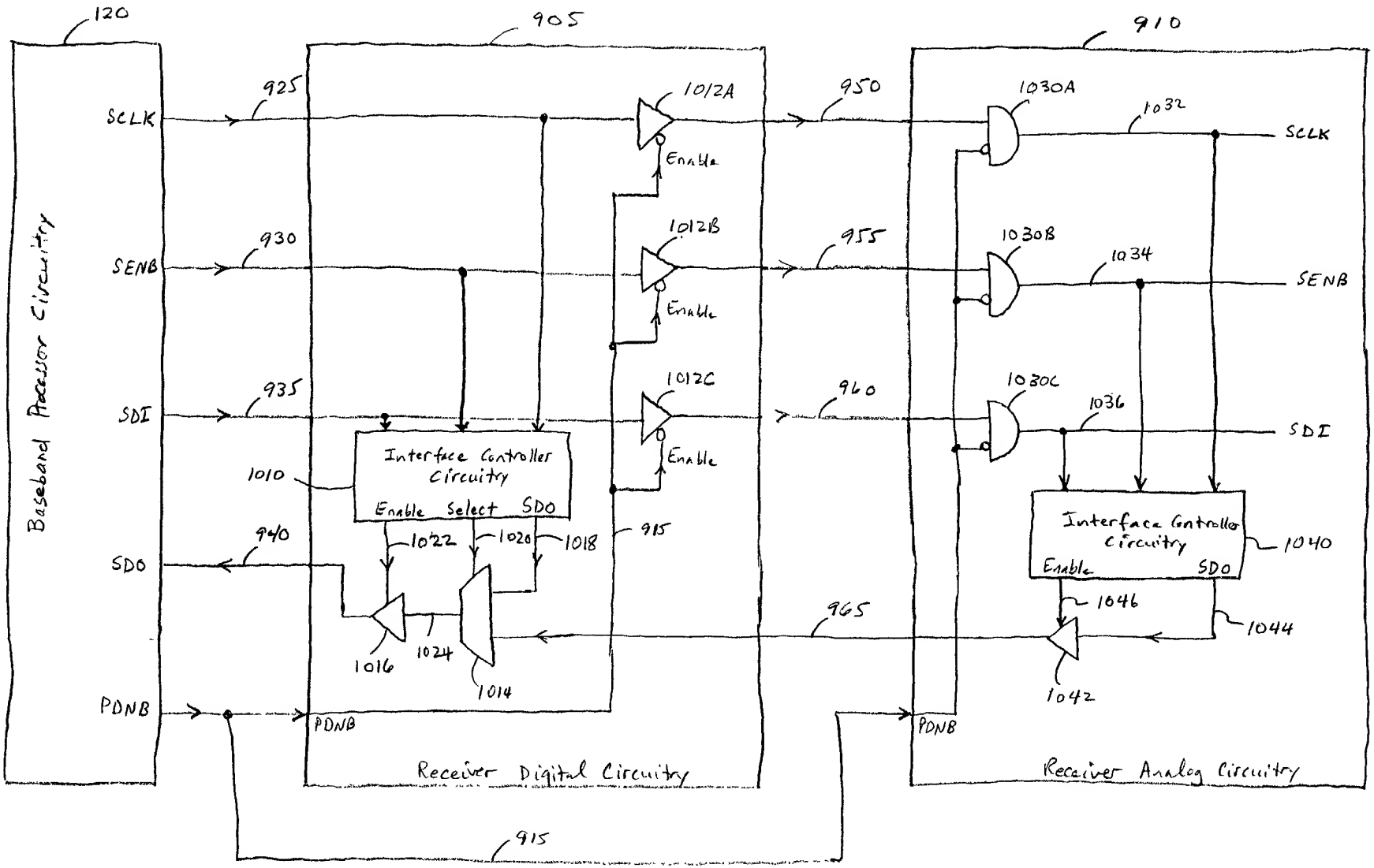

120
905
910
Baseband Processor Circuitry
SCLK
925
1012A
950
1030A
1032
SCLK
Enable
SENB
930
1012B
955
1030B
1034
SENB
Enable
SDI
935
1012C
960
1030C
1036
SDI
Enable
1010
Interface Controller Circuitry
Enable Select SDO
1022
1020
1018
915
940
SDO
Interface Controller Circuitry
1040
Enable
SDO
1046
1044
965
1016
1024
1014
1042
PDNB
PDNB
PDNB
Receiver Digital Circuitry
Receiver Analog Circuitry
915

FIG. 10

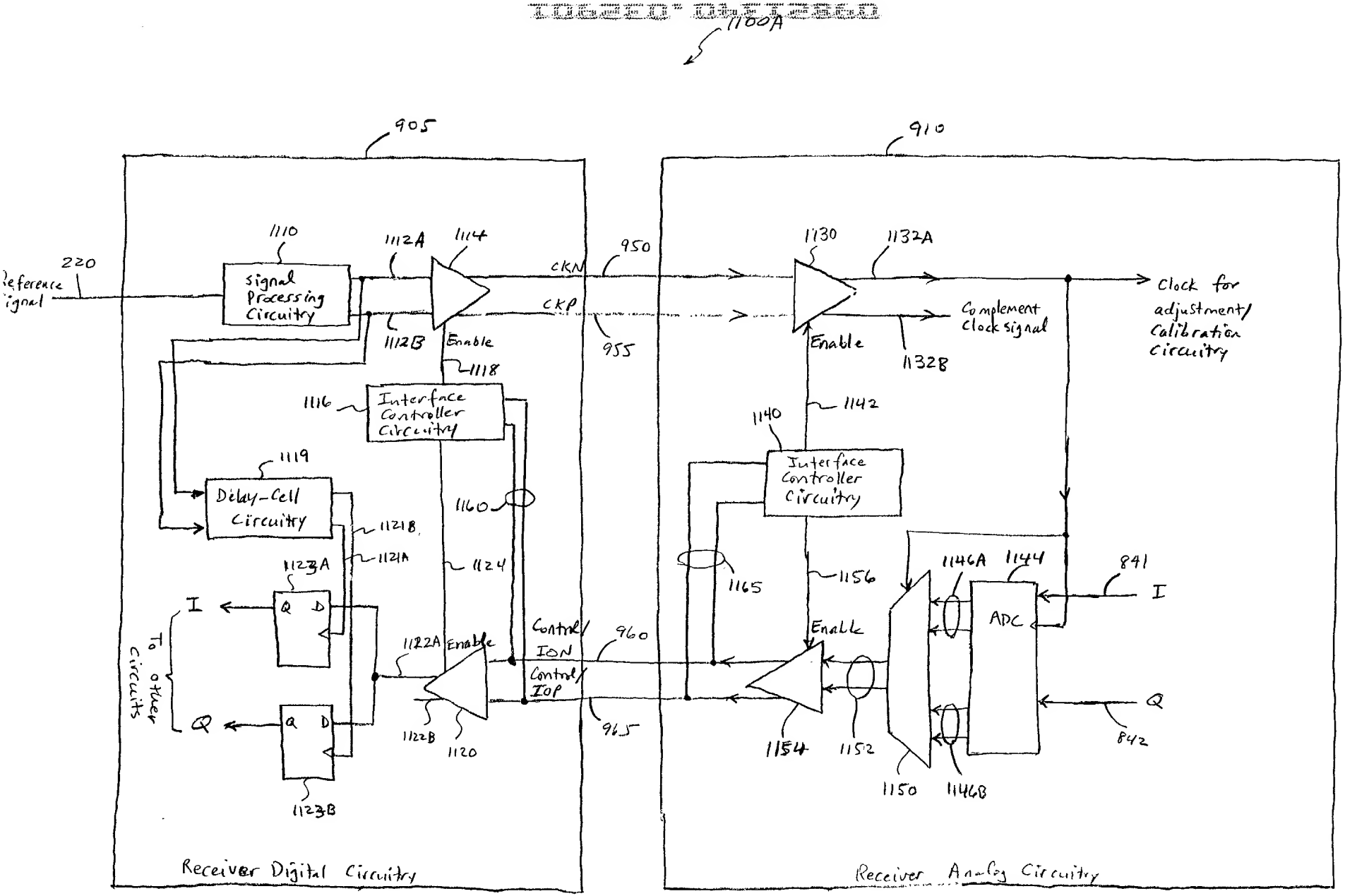

1100A
905
910
220
Reference signal
1110
signal Processing Circuitry
1112A
1114
CKN
950
CKP
955
1112B
Enable
1118
1116
Interface Controller Circuitry
1119
Delay-Cell Circuitry
1121B
1121A
1160
1124
1123A
I
Q
D
To other circuits
Q
1122A
Enable
Control ION
960
Control IOP
965
1122B
1120
1123B
Receiver Digital Circuitry
1130
1132A
Clock for adjustment/ Calibration circuitry
Complement Clock signal
Enable
1132B
1140
1142
Interface Controller Circuitry
1165
1156
1146A
1144
841
I
ADC
Enable
Q
842
1154
1152
1150
1146B
Receiver Analog Circuitry

FIG. 11A

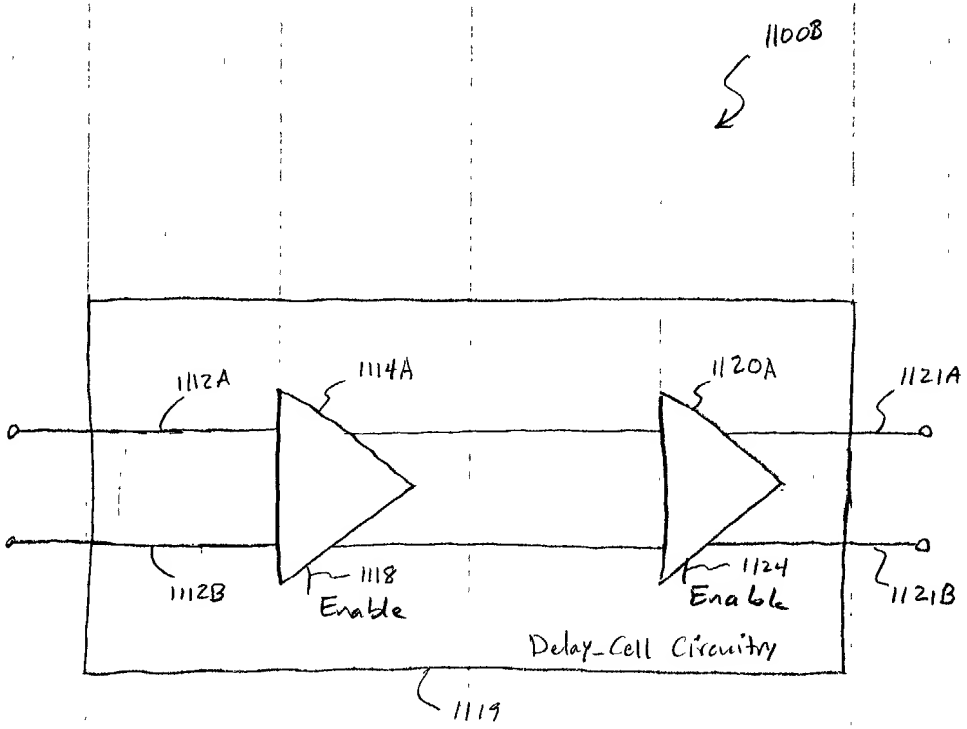

1100B
1112A
1114A
1120A
1121A
1112B
1118
Enable
1124
Enable
1121B
Delay_Cell Circuitry
1119

FIG. 11B

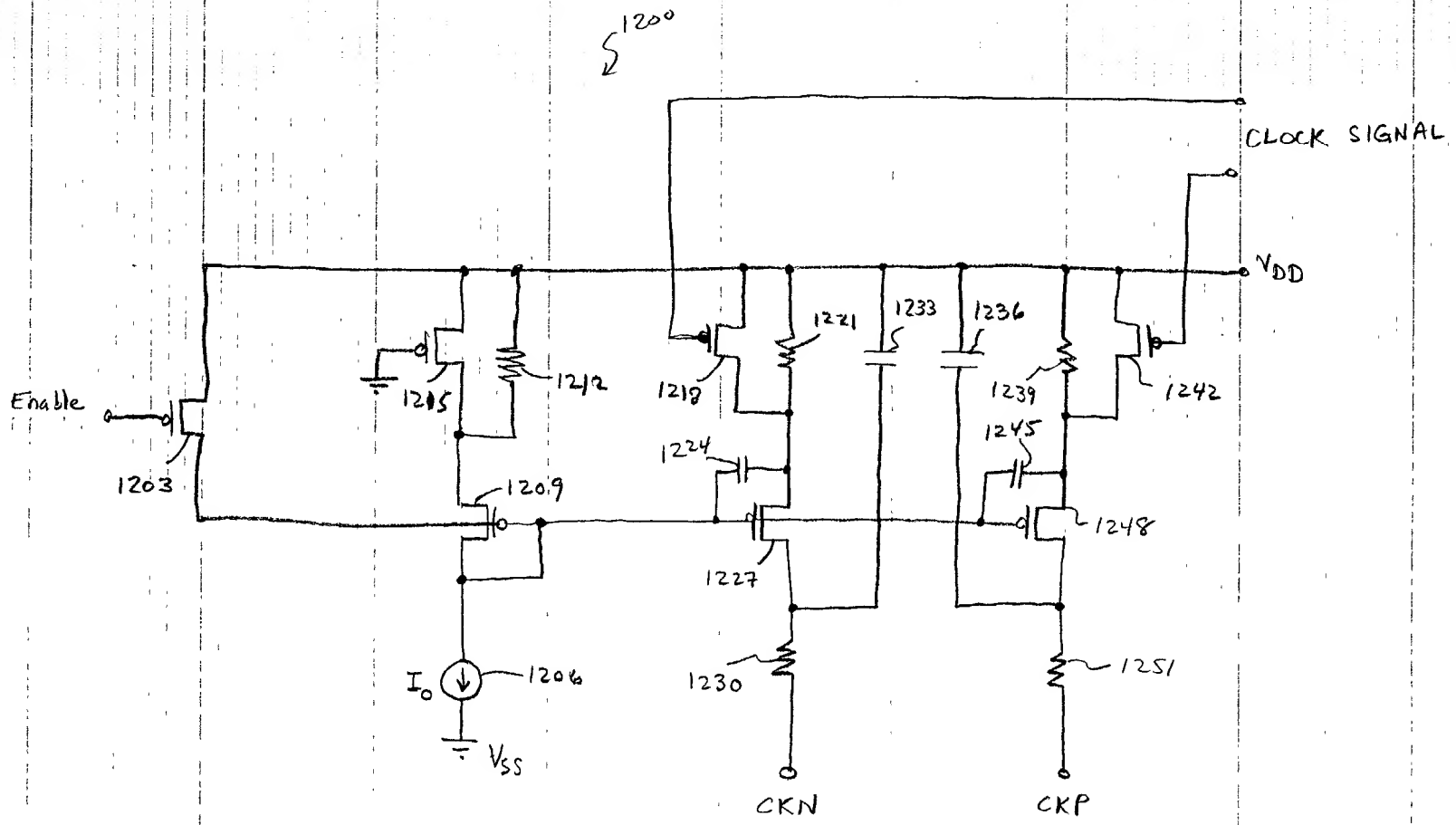

1200
CLOCK SIGNAL
V_{DD}
Enable
1203
1205
1212
1218
1221
1233
1236
1239
1242
1245
1224
1209
1248
1227
I_o
1206
V_{SS}
1230
1251
CKN
CKP

FIG. 12

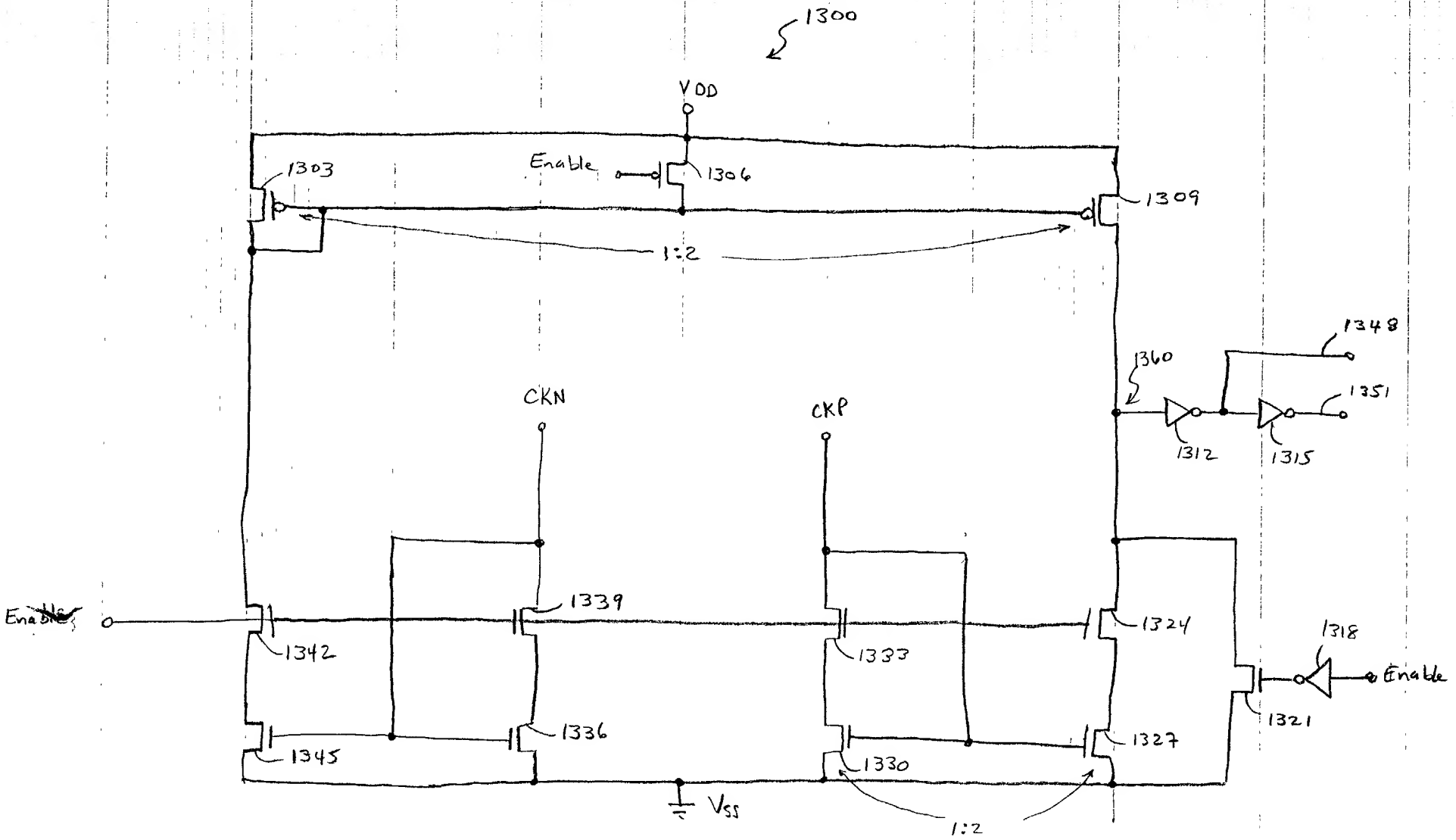

1300
VDD
Enable
1306
1303
1309
1:2
1348
1360
1351
CKN
CKP
1312
1315
Enable
1339
1342
1333
1324
1318
Enable
1336
1345
1330
1327
1321
Vss
1:2

FIG. 13

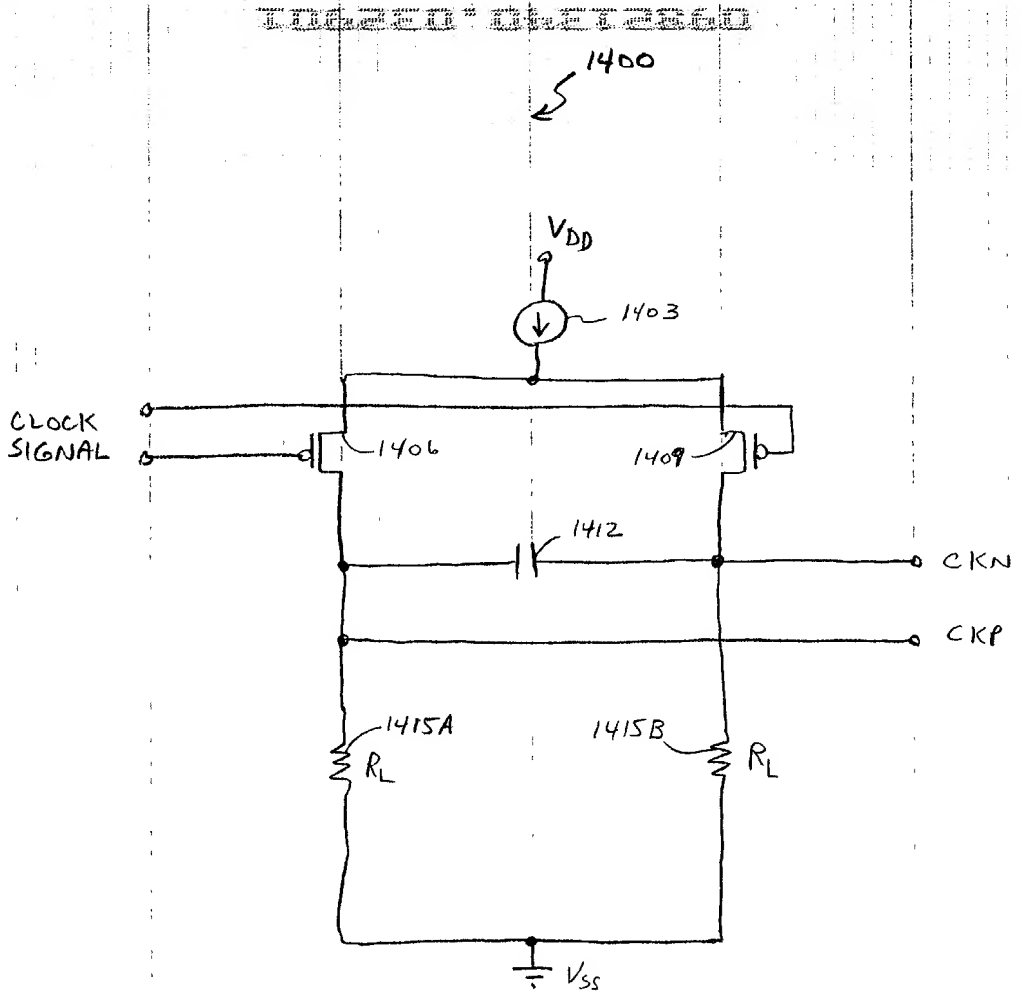

1400
V_{DD}
1403
CLOCK SIGNAL
1406
1409
1412
CKN
CKP
1415A
R_L
1415B
R_L
V_{SS}

FIG. 14